

CONTENTS.

	PAGE.
Causes Which Influence Topographical Changes, LORENZO GORDIN YATES...	1
On Problematic Organisms, JOSEPH F. JAMES.....	5
The Shell-Bearing Mollusca of Portage County, Ohio, GEO. W. DEAN.....	11
Ceremonial Circuit of the Cardinal Points, J. WALTER FEWKES.....	24
The Ash-Grey Harvest Spider, C. M. WEED.....	32
Phenomena and Development of Fecundation, H. J. WEBBER.....	103, 287
Notes Upon the Anatomy and Histology of the Prosencephalon of Teleosts. (Illustrated.) C. L. HERRICK.....	112
On the Habits and Affinities of the New Australian Mammal, <i>Notoryctes</i> <i>typhlops</i> . (Illustrated.) E. D. COPE.....	121
A Burial Mound of Florida, C. B. MOORE.....	129
Natural Analogies, S. V. CLEVENGER, M. D.....	195
The Two Schools of Plant Physiology as at Present Existing in Germany England, E. L. GREGORY.....	211, 279
The Zoology of the Snake Plains of Idaho, C. H. MERRIAM.....	218
Record of North American Zoology, J. S. KINGSLEY.....	311, 389, 722, 794
History of the Moas, F. W. HUTTON.....	361
Experimental Embryology. (Illustrated.) E. A. ANDREWS.....	367, 580
Rules of Nomenclature Adopted by the International Zoological Congress held in Paris, France, 1889, M. FISCHER.....	388
The Contemporary Evolution of Man, H. F. OSBORN.....	455
Mental Evolution in Man and the Lower Animals, A. BODINGTON.....	482, 593
The Unionidæ of Spoon River, Fulton County, Illinois, W. D. STRODE, M. D.....	495
The Difficulties in the Hereditary Theory. (Illustrated.) H. F. OSBORN.....	537
Supplementary Investigation at Tick Island. (Illustrated.) C. B. MOORE.....	568
Why the Mocking-Birds Left New Jersey—A Geological Reason, S. LOCK- WOOD, Ph. D.....	635
Heredity and the Germ-Cells. (Illustrated.) H. F. OSBORN.....	642
The Head of an Embryo Amphiuma, J. S. KINGSLEY.....	671
Importance of the Science and of the Department of Prehistoric Anthropol- ogy, T. WILSON.....	681, 809
Bifurcated Annelids. (Illustrated.) E. A. ANDREWS.....	725
Brain Centers, S. V. CLEVENGER, M. D.....	734
Catalogue of the Snakes of Nebraska with Notes on Their Habits and Dis- tribution, W. E. TAYLOR.....	742
The Problem of Marine Biology, G. W. FIELD.....	799
The Comparative Physiology of Respiration, S. H. GAGE.....	817
Heredity of Acquired Characters, M. Miles.....	887
Some Uses of Bacteria, H. W. CONN.....	901, 987
Certain Shell-Heaps of the St. John's River, Florida, Hitherto Unexplored. (Illustrated.) C. B. MOORE.....	912
A Geometrical Representation of the Relative Intensity of the Conflict Between Organisms. (Illustrated.) J. A. RYDER.....	923
The Origin of Lungs, a Chapter in Evolution, C. MORRIS.....	975
The Striped Harvest-Spider—A Study in Variation, C. M. WEED.....	999
What is an Acquired Character? C. C. NUTTING.....	1009

EDITORIALS.—The Address of Prof. Kölliker, 234; Heels or Stomach, vs. Brains, 235; Donation of General Isaac J. Wistar, 235; Mongoose in the West, 236; Correct our own Mistakes, 236; Change of Publishers, 237; Rational Nomenclature, 319; Reduction of Number and Classification of the Members of the National Academy of Sciences, 319; Western State Universities in Small Towns, 396; University Building in Lincoln, Nebraska, 753; Meeting of the American Association for the Advancement of Science, 838; The American Biological Table at Naples, 834; Vertebrata of the U. S. Geological Survey, 834; World's Congress Auxiliary of the Columbian Exposition, 930; Man's Powers of Observation, 931; The Reduction in the Appropriation to the United States Geological Survey, 930; Changes in the Courses of Study in the Grammar Schools of Massachusetts, 1014.

RECENT BOOKS AND PAMPHLETS.—	37, 144, 223, 321, 397, 502, 607, 835, 932.....	1018
------------------------------	--	------

RECENT LITERATURE.—Report of the U. S. Fish Commission for 1887, 39; Butler's Catalogue of the Birds of Indiana, 40; Kuntze's *Revisio Generum*, 147; Systematische und Topographische Anatomie des Hundes, Bearbeitet von Ellenberger und Baum, 155, 226; Braun's Literature of Parasites, 231; Recent Zoological Text-Books, 324; Mennier's *Les Methodes de Synthese en Mineralogie*, 328; The Worms of Bronn's *Thier-Reichs*, 329; Loeb's *Heliotropic Animals*, 400; Cope's Homologies of the Cranial Arches of the Reptilia, 407; An American Book on Fungi, 690; Ward's Study of an Oak Tree, 690; Flower's Study of the Horse, 691; The Fur of Animals, Lacroix-Daulard, 692; Eimer on the Origin of Striped Muscular Tissue, 837; Beecher's Studies of the Brachiopoda, 837; On the Occurrence of Artesian and Other Underground Waters in Texas, Eastern New Mexico and Indian Territory West of the 97th Meridian, R. T. Hill, 935; Evolution in Science, Philosophy and Art, 936; Newell's Outline Lessons in Botany, 937; Garner's Speech of Monkeys, 1019; Parker's Elementary Biology, 1021; Apgar's Trees of Northern United States, 1022; Bailey's Rule Book, 1023; Brehm's *Thierleben*, Kriechthiere und Lurche, 1023.

Geology and Paleontology.—The Crystalline Cambrian Deposits in Massachusetts, 156; The Fauna of the Armorician Sandstones, 156; Relations of the Chemung-Catskill Group to the Lower Carboniferous, 157; Water-Bearing Horizons of Southern New Jersey, 157; Prizes of the London Geological Society for 1891, 158; Interval Between the Glacial Epochs, 158; Arkansas Geological Survey, 1890, 158; Geological Survey of Texas, 1890, 159; The Genus *Scolithus*, 240; The Sirocco as a Disintegrating Agent, 242; Vertebrate Fossils at Samos, 248; Geologic Correlation by Means of Fossil Plants, 243; The Eocene of the United States, 330; A Florida Lake Basin, 332; Xanthidium, 333; The North American Coal Supply, 409; Cretacic Marine Currents in France, 410; Prof. Marsh on Extinct Horses and Other Mammalia, 410; On the Correlation of Moraines with Raised Beaches of Lake Erie, 412; Glacial Movements, 414; Geology of the Tonga Islands, 415; Fresh-Water Diatomaceous Deposit from Staked Plains of Texas, 505; Is Meniscotherium a Member of the Chalicotherioidea? 506; The Mexican Meteorites, 693; On the Separation and Study of the Heavy Accessories of Rocks, 694; A Section of the Strata at Rochester, New York, 695; Geological Survey of Missouri, 754; The Pacific Cable Survey, 756; Fourth Note on the Dinosauria of the Laramie, 756; The Elevation of Mount Orizaba or Citlaltepetl, 842; Seeley on the Sauropterygia, 844; Dana on the Huronian System, 845; The

Glacial Catastrophe in Savoy, 938; The Iron Ores of the Lake Superior Region, 938; The Geology of Nicaragua, 939; Cope's Lectures on Geology and Paleontology, 940; Crook on Saurodontidae from Kansas, 941; On the Permanent and Temporary Dentitions of Certain Three-Toed Horses, 942; American Devonian Fishes Found in Belgium, 1025; The Geology of Borneo, 1026; Phosphates and Marls of Alabama, 1026; Keyes' Mississippi Section, 1027; Geology of the Crazy Mountains, 1027; Geological Survey of New Jersey, 1891, 1028; A Hyena and Other Carnivora from Texas, 1028; Geological News, 50, 159, 333, 416, 508, 845, 944.....	1029
Geography and Travels. —The Galapagos Islands, 41; North Greenland Expedition, 43; Labrador's Fauna and Flora, 43; Studies of the Gulf Stream, 44; Recent Australian Exploration, 237; The Peary North Greenland Expedition.....	839
Mineralogy and Petrography. —Petrographical News, 52, 162, 244, 334, 416, 513, 612, 698, 768, 848, 948; Mineralogical News, 55, 168, 247, 337, 515, 613, 699, 770, 850; Crystallographic, 339, 514, 950; Miscellaneous, 58, 340, 422, 517, 852, 952; Syntheses, 58, 516; Quartz and Feldspar Inclusions in Diabase, 510; The Basalts of Casel, 511; The Rocks of Piedmont Plateau, 511; The Diorite of the Andes, 512; The Porphyry of Monte Doja, 512; Wernerite Rocks, 513; Nova Scotian Gmelinite, 514; The Basalt of Stempel, 610; The Crystalline Rocks of Tawmela, Finland, 611; The Eruptives of Cabo-de-Gata, 696; A Melilitic Rock from North America, 697; The Sanidinite Bombs of Menet and Monac, 697; Igneous Rocks from Montana, 698; Mount Heckla Liparites, 766; Bostonite and Monchiquite from Lake Champlain, 766; The Serpentine of the East Central Alps, 767; Thermo-metamorphism, 847; Two New Rocks, 849; Optical Anomalies, 849; The Geology of the Kaiserstuhlgebirge, 946; A Cyanite-Garnet Granulite from the Tirolese Alps, 946; Tufaceous Slates from Wales, 947; Alteration Products of Diabase from Friedensdorf, 947; Camptonite Dykes in Maine, 948; Predazzites and Pencatites, 948; Josephinite, a New Nickel-Iron Alloy, 949; New Instruments.....	952
Botany. —Notes on the Flora of Western South Dakota, 60, 63; Ferns of the Black Hills, 252; The Sargasso Sea, 253; <i>Myriostoma coliforme</i> Dicks in Florida, 341; Notes on Ginseng, 343; Popular Botany, 344; New Studies in Fecundation, 424; Development of the Ovule in <i>Grindelia squarrosa</i> (Illustrated), 708; Yucca Pollination, 774; Botany at the Rochester Meeting, 854; Citation of Authors of Genera and Species, 858; Rules of Botanical Nomenclature, 860; The Development of the Ovule of Aster and Solidago, 954; Botanical Teachers and Text-Books, 957; Development of the Floral Organs in Aster and Solidago.....	1032
Zoology. —Protozoa, 64; Trematodes, 65, 778; Cestodes, 65; Nematodes, 68; <i>Branchiostoma elongatum</i> Sundevall at San Diego, California, 70; On the Presence of an Operculum in the Aspredinidae, 71; The Barn Owl in Minnesota, 71; The Ruffed Grouse in Hudson, Ohio, 71; On Some Peculiarities in the Structure of the Cervical Vertebrae in the Existing Monotremata, 72; The Armadillo in Texas, 72; The Arachnoid of the Brain, 73; The Nervous System of Echinoderms, 171; The Land Molluscan Fauna of British New Guinea, 172; The Pycnogonid Eye, 172; Lateral Sense Organs of Elasmobranchs, 173; South American Siluroids, 173; The Spermato-phores of <i>Diemyctylus</i> , 173; A New Species of Wandering Albatross, 175; The Temperature of the Dog, 175; Zoological News, 177, 264,	

350, 781, 870; Work of Earthworms in Yoruba County, West Africa, 257; The Worm <i>Gymnorhynchus reptans</i> , 259; New Fishes from Chihuahua, Mexico, 259; Description of a New Mouse from Southern California, 261; Fresh Water Sponges, 345; Parasites of Salmon, 345; Anatomy of Stenostoma, 345; The Systematic Position of Orthelosoma, 345; Haplodiscus, 346; Echinorhynchi in America, 346; The Species of Panopœus, 346; Gamasid Mites and Ants, 347; Lepidoptera of Buffalo, 347; The Position of the Solenoconchæ, 347; The Genera of Enteropneusta, 348; Extinct or Nearly Extinct Vertebrates, 349; The Limpet's Strength, 431; Medical and Other Opinions Upon the Poisonous Nature of the Bite of the Heloderma, 431; The Cervical Vertebrae of the Monotremata, 435; The Introduction of the Reindeer Into Alaska, 435; Nomenclature of Mammalian Molar Cusps, 436; The Classification of the Anthromedusid Jelly-Fishes, 519; Free-Swimming Sporocysts, 520; <i>Peripatus leuckartii</i> Oviparous, 520; North American Thysanures, 521; Stridulation in Lepidoptera, 521; A New Compound Ascidian, 521; Lateral-Line Organs of Sharks, 522; Parallel Color-Patterns in Lizards, 522; A New Genus of Bats (Euderma), 523; Human Ruminations, 523; Temperature and Color in Lepidoptera, 618; A Curious Compound Ascidian, 619; The Development of the Teeth of Man, 620; Odontogenesis in the Ungulates, 621; Notes on a Nematode Parasite from the Chipping Sparrow (Illustrated), 705; Fishes of Ohio, 778; <i>Necturus maculatus</i> in the Hudson River, 779; The Foot in the Amniota, 780; Twisting of the Umbilical Cord, 781; Fortuitous Variation, 861; Structure of Calcareous Sponges, 863; On Echinorhynchus, 863; Onchesoma, 865: The Hæmal Region of Echinoderms, 865; Wild Animals and Snakes in India, 867; The Phylogeny of the Apterix, 867; Ridgway on the Anatomy of Humming-Birds and Swifts, 869; Thelohan on Coccidia, 958; Recent Work on Parasites, 958; New Fishes from Western Canada, 961; A New Species of Eutenia from Western Pennsylvania, 964; The Cervical Vertebrae of Monotremata, 965; On <i>Nectonema agile</i> Verrill, 1037; Linton on Entozoa, 1038; Systematic Arrangement of the Families of Birds, 1040; Shufeldt on the Anatomy of the Humming-Birds and Swifts.....	1040
--	------

Embryology.—On the Development of *Nereis dumerili*, 74; Development of the Lobster, 77; Embryology of the American Alligator, 77; Epigenesis or Evolution, 178; Regeneration of Lost Parts, 180; Embryology of Rotifers, 181; Anatomy of a Human Embryo, 265; Thyreoglossal Tract and the Hyoid, 265; Origin of Spinal Ganglia in Man, 266; Somites of Human Embryos, 266; Morphology of the Vertebrate Urino-Genital System, 438; Formation of the Germ-Layers in an Ophiurid, 442; The Origin of the Sertoli Cell, 442; Growth of the Ovum in the Fowl, 524; Sexual Glands in Mammals and in the Fowl, 525; The Tail in the Human Embryo, 526; Embryonic Veins in the Limbs of Amniota, 526; Endothelium and Blood Corpuscles in the Amphibia, 527; On the Significance of Spermatogenesis, 624; Non-Sexual Reproduction in Sponges, 626; Development of *Paludina vivipara*, 708; *Spini bifida* and the Blastopore, 782; Frog Embryos, 966; Pineal Body in Ambystoma, 966; Polyspermy in Vertebrates, 967; Entwicklungsmechanisches, 1042; Budding in Hydroids, 1043; Notes on Elasmobranch Development, 1044; Embryology of a Nematode, 1046; Note on an Abnormal Polygordius Larva, 1047.

Entomology.—The Ox Warble Fly, 78; Spontaneous Ignition of Carbon Bisulphide, 78; A Collection of Exotic Insects, 79; Entomological Notes, 79, 352, 531, 715; Descriptions of North American Bees, 297; The Robertson Cyanide Bottle, 352; Professor Forbes' Sixth Report, 352;

The Illinois Insectarium, 353; A Spider Enemy of <i>Oeneis semidea</i> , 444; Biology of the Chalcididae, 445; The Gypsy Moth, 446; Notes on Harvest-Spiders, 528; The Cattle Tick, 530; Recent Bulletins, 531; Classification of the Mites, 712; Color Preferences of the Carpet Beetle, 712; Association of Economic Entomologists, 714; Dr. Lintner's Seventh Report, 714; Notes on the Clover Mite, 715; Harvest Spider Notes, 786; Protective Resemblance in <i>Trombiculum</i> , 786; The South Dakota Insectary, 786; Wasps and Humming-Birds, 787; Recent Publications, 788, 873; Habits of <i>Prenolepis imparis</i> Say, 871; Description of the Female of <i>Aphaenogaster fulva</i> Roger, 872; Spread of the Horn Fly, 872; Chinch Bugs in New Hampshire, 872; Instinct of <i>Ammophila affinis</i> , 873; Some Florida Spiders, 873; Entomology at Rochester, 874; Iowa Insects, 968; Distribution of Spiders, 968; The Encyrtinae, 969; Directions for Collecting Insects, 970; Number of Insect Species.....	970
Microscopy. —Notes on Celloidin Technique, 354; Notes on Bone Technique, 532; Methods of Decalcification, 534, 631; Bone Cells, 632; Fibres of Sharpey, 632; Bone Medulla, 632; Gulland's Method of Fixing Paraffin Sections to the Slide, 971; A Method of Killing Nematodes for Microtome Sections.....	972
Physiology. —The Functions of the Nervous System of the Myriopoda.....	1051
Archeology and Ethnology. —The International Congress of Anthropology and Prehistoric Archeology of Paris of 1889, 185; When will the Earth be Entirely Peopled? 187; Man and the Mylodon.....	628
PROCEEDINGS OF SCIENTIFIC SOCIETIES, 83, 188, 274, 357, 448, 789, 879.....	1056
SCIENTIFIC NEWS, 101, 276, 358, 452, 535, 634, 717, 790, 886, 973.....	1060



INDEX.

A	CCADIAN Ideograms.....	453	Anthomedusan Jelly-fishes.....	519
	Acquired Characters, 887.....	1069	Anthrenus scrophulariae.....	712
	Address of Prof. Kölliker.....	234	Anthropological Studies in Japan.....	185
	Adelite.....	251	Antelope maupasii.....	945
	Agassiz Club.....	277	Apgar's Trees of Northern United States.....	1022
	Agathaumas.....	758	Apheonogaster fulva Roger.....	872
	Alabandite.....	951	Appendix of the Cæcum.....	789
	Albite Schist of Hoosac Mt., Mass.	768	Apteryx.....	867
	Alca impennis.....	349	Arachnoid of the Brain.....	73
	Allen, Prof., Variations in Vertebrated Animals.....	87	Argonite.....	340
	Almandine.....	772	Aralia quinquefolia.....	343
	Almogen Crystals.....	57	Archean News.....	1029
	Alona lepida.....	781	Archean Schists.....	167
	Alteration Products of Diabase from Friedensdorf.....	947	Archeology and Ethnology...	185
	Amarantite Analyses.....	613	Archer, F.....	634
	Amblystoma jeffersonianum.....	675	Archidistoma.....	521
	American Anatomists Association.....	188	Arkansas Geological Survey, 1890.....	158
	American Association for the Advancement of Science, 1892, 833		Armadillo in Texas.....	73
	American Devonian Fishes found in Belgium.....		Asenopyrite.....	700
	American Biological Table at Naples.....		Athropoda.....	177
	American Microscopical Society.....		Ascaris lumbricoides.....	68
	American Morphological Society.....		Ascidian, A New Compound.....	521
	American Physiological Society.....		Ascidian.....	619
	American Society of Naturalists.....		Aspredo.....	80
	Ammophila affinis.....		Aspredo aspredo.....	71
	Amniota.....		Asteracanthion rubens.....	171
	Amphiuma, Head of an Embryo.....		Astochite.....	250
	Amphiuma means.....		Astrophyllite.....	169
	Anatase Crystals.....	515	Atacamite.....	613
	Anatomy and Histology of the Prosencephalon of Teleosts.....	112	Augite Olivine Rocks.....	245
	Anatomy of Human Embryo.....	265	Australian Exploration.....	237
	Anatomy of Stenostoma.....	345	Azurite.....	701
	Andesitic Glass.....	245		
	Andrena mandibularis.....	272	B	
	Andrews, E. A., Bifurcated Annellids.....		BACTERIA, Some Uses of.....	978
	Andrews, E. A., Experimental Embryology.....	367	Bailey's Rule Book.....	1023
	Andrews, E. A., Review of Loeb's Dei Heliotropisms der Thiere.		Barton, B. W., Review of Guignard's New Studies in Fecundation.....	424
	Anquis fragilis.....		Barn Owl in Minnesota.....	71
	Annelids.....		Barite, 339, 615.....	772
	Anomalopteryx.....		Barande's Fossil Collection.....	973
	Anomodontia.....		Basalt of Cassel.....	511
			Basalt of Stempel.....	610
			Bascanium constrictor Linn.....	744
			Bascanium flagelliforme Catesby...	745
			Baur, G., Cervical Vertebrae of the Monotremata	435
			Baur, G., Peculiarities in the Struc-	

ture of the Cervical Vertebrae of the Existing Monotremata..	72	Branchiostoma elongatum Sundevall.....	70
Baur, G., Report on the Expedition to the Galapagos Islands.....	41	Brandt, Edward.....	276
Bayley, W. S., Meunier's Les Méthodes de Synthèse en Min- eralogie.....	328	Braun's Literature of Parasites.....	231
Bear River Formation.....	1030	Brehm's Thierleben, Kriechthiere und Lurch.....	1023
Beauxite.....	616	Brookite.....	852
Bees, New North American.....	267	Brücke, Ernst von.....	276
Bell, J. J., Notes on Ginseng.....	343	Bryobia pratensis.....	715
Bernardinite.....	170	Buda-Pesth Natural History Society	453
Bertrandite.....	701	Budding in Hydroids.....	1042
Beryl Crystals.....	850	Bulinus alternatus.....	1031
Bessey, C. E., Review of Apgar's Trees of Northern United States.....	1022	Bulletins of Agricultural Stations..	531
Bessey, C. E., Review of Ellis' and Everhart's Black Fungi....	690	Bulletins of Experiment Stations...	789
Bessey, C. E., Review of Ward's Study of an Oak Tree.....	—	Bulletin No. 27 U. S. Division of Entomologists.....	788
Bettany, G. J.....	536	Burial Mound of Florida.....	129
Beutenmüller, W., Lepidoptera....	874	Burmeister, H.....	792
Bifurcated Annelids.....	725	Butterflies of California.....	532
Biology of the Chalcididae.....	445	 C ALCAREOUS Sponges.....	863
Biological Department of Clarke University.....	535	Calcite, 340, 616.....	852
Biology at the Leland Stanford Junior University.....	718	Calcium-venado Pyromorphite	339
Biological Table at Naples.....	834	Calliopsis parvus.....	273
Birds of Indiana, Catalogue of....	40	Cambridge Entomological Club.....	531
Bison bonasus.....	348	Camerlander, C. F.....	634
Bismuthite.....	850	Camptolemus labradorius.....	349
Bizzozero's Method of Decalcification.....	632	Camptonite Dykes in Maine.....	948
Blissus leucopterus.....	872	Canefri, C. T.....	536
Bocourt, F.....	717	Canestrini, Riccardo.....	881
Bodington, A., Mental Evolution in Man and the Lower Animals.....	482	Canimartes cumminsii.....	1029
Bolleite.....	593	Caprification of the Fig.....	874
Bonasa umbellus.....	250	Caranx trachurus.....	958
Bone Cells.....	632	Carbon Bisulphide.....	78
Bone Medulla.....	632	Carphophiops vermis Kenn.....	742
Boninite.....	849	Carus, J. V., The Cervical Vertebrae of Monotremata.....	965
Boophilus bovis.....	530	Catalogue of the Shell-bearing Mollusca of Portage Co., O... .	11
Borophagus diversidens.....	1028	Cattle Tick.....	530
Boston Society of Natural History. 193, 274, 357, 450, 766	1059	Caulfield, F. B.....	452
Botanical Club of the A. A. A. S....	884	Causes which Influence Topographical Changes.....	1
Botanical Nomenclature.....	860	Caverns of Central America.....	185
Botanical Teachers and Text-Books	957	Cedroxyton ryedalense.....	1030
Botany, 60, 253, 341, 424, 703, 854, 954.....	1032	Celestite.....	516
Botany at the Rochester Meeting...	854	Celloidin Technique.....	354
Bothreolepis canadensis.....	1025	Cellular Epidote in Granite.....	848
Boulder Trains and Boulder Belts..	50	Cenozoic News, 51, 160, 509, 945..	1031
Bouronite.....	851	Ceremonial Circuit of the Cardinal Points	24
Brain Centers.....	734	Cerussite.....	514
		Cervical Vertebrae of Monotremata, 72, 435.....	965
		Cervus pachygenys.....	945
		Cestodes	65
		Chaetoptila augustipluma.....	349

Chairmen of Committees on Anatomical and Biological Nomenclature	792	Cope, E. D., Fourth Note on the Dinosauria of the Laramie....	756
Change of Publishers.....	237	Cope, E. D., Homologies of the Cranial Arches of the Reptilia.....	407
Chemical Relations of Eruptive Rocks	334	Cope, E. D., Parallel Color-Patterns in Lizards.....	522
Chiariugi's Method of Decalcification	632	Cope's Lectures on Geology and Paleontology.....	940
Chiastolite Schists	612	Cope, E. D., A New Species of <i>Eutenia</i> from Western Pennsylvania.....	964
Chilean Ore.....	848	Cope, E. D., On the Habits and Affinities of <i>Notoryctes</i> <i>phylops</i>	121
Chilonyx.....	376	Cope, E. D., On a New Genus of Mammalia from the Laramie Formation.....	758
Chinch Bugs in New Hampshire.....	872	Cope, E. D., On the Permanent and Temporary Dentition of Certain Three-toed Horses.....	942
Chironomus plumosus.....	959	Cope, E. D., Review of Crook's Saurodontidae from Kansas.....	941
Chlorite Analyses.....	338	Cope, E. D., Review of Marsh's Extinct Horses and other Mammalia.....	410
Chlorite pseudomorphs.....	951	Cordierite.....	951
Chloritoid of a Graywacke Schist.....	771	Coregonus coulterii.....	961
Christianite	701	Coregonus williamsonii.....	961
Cidarites glandarius Lang.....	49	Cornell Medical Society.....	789
Cienegas of California.....	1029	Correlation of Moraines with Raised Beaches of Lake Erie.....	410
Cinosternum bauri	177	Cottus beldingii.....	963
Citation of Authors of Genera and Species.....	858	Cottus minutus.....	963
Classification of the Mites.....	712	Cottus philonips.....	963
Claorhynchus trihedrus.....	757	Cottus pollcaris.....	963
Cleavage Cells.....	1042	Cottus onychus.....	963
Clevenger, S. V., Brain Centers.....	734	Courses of Study in Grammar Schools.....	1014
Clevenger, S. V., Natural Analogies	195	Cretaceous Flora.....	1030
Clymenia neapolitana.....	333	Cretaceous Fossils from Syria.....	49
Cnemidophorus gularis.....	518	Cretaceous Marine Currents in France.....	410
Cnemidophorus tessellatus.....	518	Cretaceous Marl.....	51
Coal Supply of North America.....	409	Cretaceous Reptiles.....	161
Cobitis fossils.....	870	Crinoids from Piedmont, Virginia.....	944
Coccidium bigeminum.....	958	Crocodilia.....	408
Coccidium cruciatum.....	958	Crotalophorus catenatus catenatus Raf.....	752
Coccidium gasterostei.....	958	Crotalus confluentus Say.....	752
Coccidium perforans.....	960	Crowly's Ridge.....	50
Coccidium sardinæ.....	958	Crystalline Cambrian Deposits in Massachusetts.....	156
Color Preferences of the Carpet Beetle	712	Crystalline Rocks of Tammela, Finland.....	611
Coluber obsoletus obsoletus Say.....	746	Crystalllography	339
Coluber vulpinus Bd. and Gird.....	745	Cup Markings of Espiaux.....	186
Columbite.....	613	Cyanide Bottle.....	352
Comparative Physiology of Respiration.....	817	Cyanite-Garnet-Granulite from the Tirolese Alps.....	946
Compound Ascidian.....	619		
Conflict Between Organisms.....	923		
Conglomerates and Breccias of the Flysch in Switzerland.....	949		
Conn, H. W., Some Uses of Bacteria.....	901		
Conophyllum	978		
Conurus carolinensis.....	1030		
Cope, E. D., The Age of the Staked Plains of Texas.....	49		
Cope, E. D., Definite vs. Fortuitous Variation in Fossil Vertebrata.	89		
Cope, E. D., The Fauna of the Blanco Epoch.....	1058		

DARTERS of Canada.....	962	Ebener's Hydrochloric Acid and Sodium Chloride Method of Decalcification.....	631
<i>Davainea (Tænia) madagascariensis</i>	68	<i>Echinococcus hydatid</i>	65
Dean, G. W., The Shell-bearing Mollusca of Portage Co., O.....	11	<i>Echinococcus multilocularis</i>	960
Decalcification.....	534	<i>Echinorhynchi</i> in America.....	346
Definite vs. Fortuitous Variation in Animals and Plants.....	83	<i>Echinorhynchus</i>	863
Delphinognathus conocephalus.....	944	<i>Echinorhynchus gigas</i>	959
Demarbaix's Method of Decalcification.....	633	Economic Entomologists Association	714
Denton, S. W., A Spider Enemy of <i>Oeneis semidea</i>	444	Editorials, 234, 319, 396, 753, 833, 930.....	1014
Derap-kite.....	249	Edwards Entomological Collection.....	532
Development of the Floral Organs in <i>Aster</i> and <i>Solidago</i>	1032	Eimeria.....	958
Development of the Lobster.....	77	Elasmobranch Development.....	1044
Development of <i>Nereis dumerilii</i>	74	Elementary Biology.....	1021
Development of the Ovule of <i>Aster</i> and <i>Solidago</i>	954	Eleolite-Syenites.....	421
Development of the Renal Organs of Amphibia.....	183	Elevation of Mount Orizaba.....	842
Development of Teeth in Man.....	620	Elk Lake.....	50
Devonian Fish-Fauna.....	1030	Embryology, 74, 178, 265, 367, 438, 524, 580, 624, 708, 782, 966	1042
Diadophis punctatus Linn.....	744	Embryology of the American Alligator	77
Diallage.....	699	Embryology of a Nematode.....	1046
Diamond.....	58	Embryology of Rotifers.....	181
Diaspore Crystals.....	339	Embryonic Veins in the Limbs of Amniota	526
Diatomaceous Deposit from Staked Plains, Texas.....	505	Enargite.....	773
Dibelodon humboldtii.....	1059	Encyrtine.....	969
Dibelodon precursor.....	1059	Endothelium and Blood Corpuscles in the Amphibia	527
Dibelodon tropicus.....	1059	Enteropneusta.....	348
Didus ineptus.....	349	Entomological Club of the A. A. A. S.....	884
Dinichthys pustulosus.....	1025	Entomological Exhibit at the World's Fair.....	715
Dinichthys terrilli.....	1025	Entomological Notes.....	352
Dinosauria	408	Entomological Publications.....	873
Dinosauria of the Laramie, Fourth Note.....	756	Entomological Working Facilities.....	715
Diomedea regia.....	175	Entomology, 78, 297, 252, 444, 528, 712, 788, 871.....	968
Diophtase.....	772	Entomology at Rochester.....	874
Diorite of the Andes.....	512	Entozoa	1037
Diptera Braziliania.....	873	Entwicklungsmechanisches.....	1042
Dipterus flabelliformis.....	1025	Eocene of the United States.....	331
Dipterus nelsonii.....	1025	Epigenesis or Evolution.....	178
Directions for Collecting Insects.....	970	Epsomite	951
Disphargus gasterostel.....	959	Equus simplicidens.....	49
Distoma magnum Bassi.....	960	Erebus agropyrus.....	79
Distomum nodulosum.....	69	Erethizon dorsatum.....	177
Distomum texicanum Francis.....	961	Erisichtheidae.....	941
Distribution of Spiders	968	Eruptive Rocks of Arkansas.....	416
Dohrn, Carl.....	886	Eruptive Rocks of Cabo-de Gata..	696
Drepanis pacifica.....	349	Eruptive Rocks of Flagstaff Hill, Col.....	769
Drepanopterus.....	333	Eruptive Rocks of Pilot Knob, Mo.	612
Dulichius wrongtonii.....	716	Eruptive Rocks of Velay.....	52
EARTHQUAKE in Gifuken.....	535	Esox nolbior	49
Earthquake in Japan	45	Esperella fibrexilis.....	627
Earthworms in Yoruba Country, West Africa, Work of	257		

Etching with Hydrofluoric Acid.....	853	Fischer, M., Review of Systematische und Topographische Anatomie des Hundes, bearbeitet von Ellenberger und Braun	155
Etheostoma aspro.....	962	Fischer, M., Rules of Nomenclature Adopted by the International Zoological Congress held in Paris, France, 1889.....	383
Etheostoma boreale.....	962	Fish Commission of the United States, Report of for 1887.....	39
Etheostoma guntheri.....	962	Fishes from Chihuahua, Mexico.....	259
Etheostoma iowae.....	962	Fishes of Ohio.....	778
Etheostoma nigrum.....	962	Fishes of South America.....	431
Etheostoma quappella	963	Flora of Western S. Dakota... 60	253
Etheostoma scovelli.....	260	Florida Lake Basin.....	232
Etheostoma wrighti.....	778	Foliated Rocks of Otago.....	1030
Eukarite	168	Foolite.....	249
Euowenia.....	1031	Foot in the Amniota.....	780
Eutenia brachystoma.....	964	Foraminifera.....	945
Eutenia elegans vagrans.....	748	Fortuitous Variation.....	861
Eutenia proxima.....	748	Fossil Birds.....	160
Eutenia radix.....	748	Fresh Water Fishes of South America.....	431
Eutenia sirtalis dorsalis.....	749	Fresh Water Sponges.....	345
Eutenia sirtalis obscura.....	749	Frog Embryos.....	966
Eutenia sirtalis parietalis.....	749	Functions of the Nervous System of the Myriopoda.....	1051
Eutenia sirtalis sirtalis.....	749		
Euzophera semifuneralis.....	353		
Evolution 593	975		
Evolution of Man.....	455		
Evolution of the Moon.....	1056		
Evolution in Science, Philosophy and Art.....	836		
Ewald, J. W.....	634		
Experimental Embryology... 367	580		
Exploring Expedition of the Museum of Natural History of New York.....	721		
Extinct Vertebrates.....	348		
Eycleshymer, A. C., Celloidin Technique.....	354		
FASCIOLA americana.....	65	GAGE, S. H.—The Comparative Physiology of Respiration.....	817
Fasciola cariosa.....	65	Galapagos Islands.....	41
Fauna of the Armorican Sandstones.....	156	Gamasid Mites and Ants.....	347
Fauna of the Blanco Epoch.....	1058	Gambling Games of the Chinese in America.....	453
Fayalite.....	56	Garner's Speech of Monkeys.....	1019
Fecundation.....	103	Garnet.....	616
Fecundation and Development.....	279	Geognosy, Handbook of.....	952
Feldspar Crystals.....	340	Geography and Travels, 41, 237...	839
Felis bengalensis.....	1029	Geomys bursarius.....	177
Ferns of the Black Hills.....	252	Geological News, 50, 159, 333, 416, 509, 744.....	1029
Ferro-goslarite	248	Geological Survey of New Jersey, 1891.....	1028
Fewkes, J. W., Ceremonial Circuit of the Cardinal Points.....	24	Geologic Correlation by Means of Fossil Plants.....	243
Fibres of Sharpey.....	632	Geology and Paleontology, 45, 156, 240, 330, 409, 505, 693, 754, 842, 938	1025
Field, G. W., Review of Lemon's Morphology of the Vertebrate Uro-genital System.....	438	Geology of Borneo.....	1026
Field, G. W., The Problem of Marine Biology.....	799	Geology of the Crazy Mountains..	1027
Filaria cervina.....	960	Geology of the Kaiserstuhlgebirge.	946
Filaria equina.....	960	Geology of the Massive Rocks of Cyprus.....	949
Fishes from Western Canada.....	961	Geology of Nicaragua.....	939
		Geology of the Tonga Islands....	415
		Germ-Cells.....	642
		Gibbsite.....	613

Gilbert, G. K., Evolution of the Moon.....	1056	Harvest Spiders.....	32, 528	999
Gillette's Observations Upon Injurious Insects.....	715	Hassall, A., Recent Work on Parasites.....	958	
Ginseng.....	343	Haug's Phloroglucine Method.....	534	
Glacial Catastrophe in Savoy.....	938	Heels and Stomach vs. Brains.....	235	
Glacial Epoch in Central Europe.....	945	Heliotropic Animals.....	400	
Glacial Epoch in Nicaragua.....	51	Heloderma horridum.....	431	
Glacial Groove on Kelley Island, Lake Erie.....	101	Hematin.....	772	
Glacial Movements.....	414	Heredity of Acquired Characters.....	887	
Gmelinita from Nova Scotia.....	514	Heredity and Germ Cells.....	642	
Gneisses of United States.....	768	Heredity Theory.....	537	
Goniometer.....	59	Héron, Roger, Louis, Francois.....	276	
Gordaita.....	617	Herrick, C. L.....	792	
Graber, Veit.....	886	Herrick, C. L., Notes Upon the Anatomy and Histology of the Prosencephalon of Teleosts	112	
Graeff's Expedition to the Tropics, Graeff's Geology of the Kaiser-stuhlgebirge.....	973	Hessite	850	
Granite from Faréolle, France.....	769	Heterodon nasicus nasicus.....	748	
Granites of United States.....	768	Heterodon platyrhinus.....	747	
Gregory, E. L., The Two Schools of Plant Physiology as at Present Existing in Germany and England.....	211	Heulandite Group.....	771	
Grindelia.....	698	Hippotherium gratum.....	942	
Grindelia squarrosa.....	703	Histiotsus maculatum.....	523	
Growth of the Ovum in the Fowl, Gulf Stream Studies.....	524	History of the Moas.....	361	
Gulland's Method of Paraffin Sections to the Slide.....	44	Holoptichius americanus.....	1025	
Gymnorhynchus reptans.....	259	Homeosaurus major.....	51	
Gypsum Crystals.....	951	Homologies of the Cranial Arches of the Reptilia.....	407	
Gypsy Moth.....	446	Hopkin's Seaside Laboratory.....	452	
H abits and Affinities of Notoryctes typhlops.....	121	Horn-Fly.....	872	
Haemal Region of Echinoderms.....	865	Hubernite Crystals.....	850	
Haematobia serrata.....	79	Human Rumination.....	523	
Haggard, G.....	634	Huronian System.....	845	
Heredity of Acquired Characters.....	887	Humming-Birds.....	1037	
Halictus anomalous.....	272	Hutton, F. W., History of the Moas	361	
Halictus apokensis	272	Hydroids.....	1042	
Halictus ashmeadii.....	271	Hyena and Other Carnivora from Texas.....	1028	
Halictus cephalicus.....	270	Hylonomus wildii.....	333	
Halictus floridanus.....	269	Hypoderma bovis.....	78	
Halictus hartii.....	268	Hypoderus columbae.....	875	
Halictus illinoensis.....	271			
Halictus longiceps.....	272	I CHTHYODECTES Arcuatus	942	
Halictus obscurus.....	270	Ichthyopterygia.....	418	
Halictus pruinulos.....	269	Ichthyophis glutinosus.....	438	
Halictus reticulatus.....	268	Ichthyosaurus tenuirostris.....	51	
Halsted, B. D., Botany at the Rochester Meeting.....	854	Igneous Rocks from Montana.....	698	
Haplodiscus piger.....	346	Ilvaite	516	
Haploidonotus.....	103	Imbedding Blastoderm of Chick in Collodion	81	
Harvard University.....	791	Indiana Academy of Sciences, 92	1060	
		Indian Literature.....	536	
		Indices of Refraction.....	518	
		Infusorial Earths of Pacific Coast..	47	
		Insectarium of Illinois.....	353	
		Insectary in South Dakota.....	787	
		Insect Parasites.....	531	
		Insects Affecting Cabbage.....	874	
		Insects in Stored Grain.....	874	

Index.

Insects Which Burrow in Stems of Wheat.....	715	Laramie Formation.....	845
Instinct of <i>Ammophila affinis</i>	873	Lateral-Line Organs of Sharks.....	522
Interproglottidial Gland.....	961	Lateral Sense-Organ of Elasmobranchs.....	173
Interval Between the Glacial Epochs.....	15	Latonopsis occidentalis.....	781
Invertebrates.....	781	Lauterite	249
Iodochrome.....	249	Lavae and Tufas of Mite Vulture, Italy.....	336
Iolite.....	334	Lee, S. A., Report on an Expedition to Labrador.....	43
Iowa Academy of Sciences.....	96	Lepidoptera	618
Iowa Insects.....	968	Lepidoptera of Buffalo.....	347
Iron Ores of the Lake Superior Region.....	245	Leucite	701
Iron Ores of San Paulo, Brazil.....	53	Leucitophyres of the Laacher-See Region.....	166
Isomorphism.....	699	Leucosolenia conicaea.....	863
J ACKSON, R. T., Review of Beecher's Studies of the Brachiopoda.....			
James, J. F., On Problematic Organisms.....	5	Libbey, W., Report on the Currents in the Gulf Stream.....	44
Jeremejewite.....	56	Limpet's Strength.....	431
Johns Hopkins University.....	791	Lintner's Seventh Report of Insects of the State of New York.....	714
Josephinite.....	949	Linton, E., on Entozoa.....	1037
Joubin, Dr.....	277	Linton, E., Notes on a Nematode Parasite from the Chipping Sparrow.....	705
Jura-Trias.....	945	Linton, E., Notice of Trematode Parasites in the Crayfish.....	69
K AMACITE.....			
Kansas University Quarterly		Liobunum vittatum.....	786
Kaolinic Group.....		Liodon mosasauroides.....	945
Keramohalite.....		Lioptelis vernalis Dekay.....	744
Kersantite.....		Liparites from Mount Hekla.....	766
Keyes' Mississippi Section.....	169	Lithium Mica.....	951
Killias, E.....	792	Lithobius.....	1051
Kingsley, J. S.....	247	Lockwood, S., Why the Mocking-Birds Left New Jersey.....	635
Kingsley, J. S., Head of an Embryo Amphiuma.....	615	Lophiodon	763
Kingsley, J. S., On Recent Zoological Text-Books.....	949	Lopholatilus chamæonticeps.....	350
Kingsley, J. S., Record of North American Zoology.....	1027	Löroit's Method of Decalcification	633
Koenig, G. A.....	536	Lowrey, P. J. F.....	536
Kölliker's Method of Decalcification.....	634	Lucas, F. A., American Association for the Advancement of Science at Rochester.....	879
Korynite.....	671	Lunel, Godfrey.....	453
Krennerite.....	324	Luzonite	169
L ABRADOR Granite from Finland.....			
Labrador's Fauna and Flora.....	244	M ACROLINUS Augustirostris..	
Lacerta muralis.....	43	Mackay, Sir William.....	348
Lacerta viridis.....	534	MacMillan, C., Citation of Authors of Genera and Species	276
Lacerilia.....	967	Magnesian Limestone.....	858
Land Molluscan Fauna of British New Guinea.....	392	Magnetite.....	944
Lane's Tables for Petrography.....	172	Malachite	52
Langbanite.....	422	Malaria Parasites.....	701
	337	Man and the Mylodon.....	64
		Manatus americanus.....	628
		Manganese Oxides.....	870
		Manospondylus gigas.....	953
			757

Man's Powers of Observation.....	981	Mineralogical News, 55, 168, 247, 337, 515, 613, 699.....	770
Margarodite.....	951	Mineralogical Notes.....	950
Marine Biological Laboratory, Wood's Hall.....	276	Mineralogical Syntheses.....	58 516
Marine Biological Laboratory..	791	Mineralogie of Banded Inclusions from the Tyrolese Alps.....	768
Marine Biology.....	799	Mineralogy of the Central Plateau of France.....	701
Marshall, W. B., <i>Necturus macula-</i> <i>tus</i> in the Hudson River.....	779	Mineralogy of Chilean Ore.....	848
Martin, G. W., Development of the Floral Organs in <i>Aster</i> and <i>Solidago</i>	1032	Mineralogy of Rocks from Lake District, Eng	769
Mastodon <i>augustidens</i>	49	Mineralogy of the Peninsula of Kola	335
Mastodontosaurus Jaeger.....	376	Mineralogy and Petrography, 52, 162, 244, 334, 416, 510, 610, 696, 766, 847.....	946
McMurrich, Prof., Definite vs. Fortuitous Variation in Inver- tebrate Animals.....	86	Minnesota Natural History Survey, 1889, Report of.....	46
Meehan, T., Variation in Plants....	85	Minot, C. S.....	1061
Meionite.....	772	Missouri Geological Survey.....	754
Melanite.....	57	Moas.....	361
Melanophlogite.....	771	Mocking-Birds Left New Jersey, a Geological Reason Why.....	635
Melilite.....	853	Mollusca.....	176
Melilite Rock from North America	697	Mollusca of Lower California.....	11
Melissodes palustris.....	273	Moliusca of Portage County, Ohio	11
Mental Evolution in Man and the Lower Animals.....	482	Monachus tropicalis.....	34
Meniscotherium a Member of the Chalicotheriodea	506	Mongoose in the West.....	236
Merychippus insignis.....	943	Montezia flavissima.....	961
Mermis crassa.....	959	Monkeys.....	1019
Merriam, C. H., Zoology of the Snake Plains of Idaho.....	218	Monotremata.....	72
Mesabi Iron Ore.....	1029	Moore, C. B., A Burial Mound of Florida.....	129
Mesotype Group.....	615	Moore, C. B., Shell Heaps of the St. John's River, Hitherto Unexplored.....	912
Mesozoic News.....	51, 161, 945	Moore, C. B., Supplementary In- vestigation at Tick Island.....	568
Metcalf, M. M., Development of Paludina vivipara.....	708	Morgan, A. P., On Myriostoma coliforme Dicks.....	341
Meteoric Iron.....	170	Morphology of the Vertebrate Uro- genital System.....	438
Meteorites, Mexican.....	693	Morris, C., The Origin of Lungs, A Chapter in Evolution.....	975
Methods of Decalcification.....	631	Mosquitoes.....	875
Method of Killing Nematodes for Microtome Sections.....	972	Mouse from Southern California...	261
Mettacinnabarite.....	771	Multiple Embryos in <i>Amphioxus</i> ..	1059
Mennier's Methodes de Synthèse en Mineralogie.....	328	Muscophagidae.....	870
Meves, F. W.....	536	Muscular Tissue.....	837
Micas and Chlorites.....	851	Museum of Ethnology at Chicago.....	973
Mica Schist in Silesia.....	698	Museum Reforms.....	359
Michel-levyite.....	55	Myriostoma coliforme Dicks, in Florida	341
Microscopy.....	354, 423, 532	Myxostoma macrolepidotum Les....	48
Middle Cambrian Strata.....	1030	Myzomymus scutatus (Müller) Stiles.....	960 961
Mijkite.....	849		
Milarite.....	852		
Miles, M., Heredity of Acquired Characters.....	887		
Miller, G. S., Description of Ves- perimus fraterculus.....	261		
Mineral Deposits of Leogang in Salzburg.....	700		
Mineral Resources of Canada.....	518		
NAGELI, WM., Karl von.....		101	
National Academy of Sci- ences.....		1056	

Natrix fasciata sipedon.....	751	Optical Anomalies.....	849
Natrix leberis.....	750	Optical Anomalies.....	517
Natrolite.....	850	Oriental History Society of Alten-	
Natural Analogies.....	195	berg.....	277
Natural History Hall.....	1061	Origin of Lungs.....	975
Naturalists Make Mistakes.....	236	Origin of the Spinal Ganglia in	
Natural Science.....	791	Man.....	266
Nebraska Academy of Science, Second Annual Meeting.....	96	Orizaba.....	842
Nectonema.....	1037	Orographic Lines in Southern Cal-	
Nectonema agile.....	1037	fornia.....	159
Necturus maculatus in the Hud- son River.....	779	Orthoceratidae.....	944
Nematodes.....	68	Osborn, H. F., Contemporary	
Nematode Sections.....	972	Evolution of Man.....	455
Nepheline.....	57	Osborn, H. F., Difficulties in the	
Nephrite.....	54	Heredity Theory.....	537
Nereis dumerilli.....	74	Osborn, H. F., Heredity and the	
Nerve-Endings.....	870	Germ-Cells.....	642
Nervous System of Echinoderms..	171	Osborn, H. F., Odontogenesis in	
Nesquenonite.....	516	Ungulates.....	621
Neurology.....	793	Osborn, H. F., Is Meniscotherium	
New Instruments.....	952	a Member of the Chalicother- ioidae?.....	506
New Studies in Fecundation.....	424	Osborn, H. F., Nomenclature of	
Newtonite.....	247	the Mammalian Molar Cusps..	436
New York Academy of Sciences .	1059	Osborn, H. F., What Is Lophio- don?.....	763
Noctuidae of Boreal America.....	874	Ostracoda.....	160
Nomenclature.....	319, 383	Outline Lessons in Botany.....	935
Nomenclature of the Mammalian Molar Cusps.....	436	Ox Warble Fly.....	78
North Greenland Expedition.....	43	 P ACHYORNIS.....	945
Note on an Abnormal Polygordius Larva	1047	Pachyornis rothchildii.....	945
Notes on Bone Technique.....	532	Pacific Cable Survey.....	755
Notes on Elasmobranch Develop- ment	1044	Pagurus striatus.....	781
Notoryctes typhlops.....	121	Palæomon ornatus.....	788
Notropis chihuahua.....	260	Paleozoic Leucite Rock.....	246
Novák Ottomar.....	973	Paleozoic News, 50, 160, 333, 509,	
Number of Insect Species.....	970	944.....	1030
Nutting, C. C., What Is an Ac- quired Character?.....	1009	Paludina impura.....	69
O BITUARIES, 101, 276, 358, 453, 536, 634.....	792	Paludina vivipara.....	708
Obsidian.....	698	Panopeus	346
Occurrence of Underground Waters in Texas.....	935	Pantylus Cope.....	376
Ocnerea dispar.....	715	Paradoxides Zone.....	160
Odobenus obesus.....	348	Parallel Color-Patterns in Lizards..	522
Odontogenesis in Ungulates.....	621	Paramelaconite.....	249
Oeneis semidea.....	444	Parasites of Salmon.....	345
Olenellus Fauna.....	50	Pariotichus Cope.....	376
Onchnesoma steenstrupii.....	865	Parker's Elementary Biology.....	1021
Operculum in Aspredinidae.....	71	Patton, W. H., Description of the	
Ophibolus colligaster Say.....	743	Female of Aphænogaster fulva	
Ophibolus doliatus coccineus	742	Roger.....	872
Ophibolus getulus sayi.....	743	Patton, W. H., Habits of Prenole-	
Ophidia.....	392	pis imparis Say.....	871
		Peary North Greenland Expedition	839
		Pegmatitic Veins.....	167
		Pelecanus erythrorhynchus.....	66
		Pelecoptera.....	942
		Pelycosauria.....	392
		Pelzeln, A. von.....	536

Pencatites.....	948	Procoptodon rapha.....	52
Pennula ecaudata.....	349	Procoptodon goliah.....	52
Pentastomum proboscidium.....	959	Proetus australis.....	944
Pericline.....	57	Proetus rattei.....	944
Peridotite.....	613	Pronuba yuccasella.....	774
Peripatus leuckartii.....	177	Propelargus (?) edwardsii.....	945
Peripatus leuckartii Oviparous.....	520	Protective Resemblance in Trom- bidium.....	786
Petrographical News, 52, 132, 334, 416, 513, 612, 698, 768.....	948	Protohippus medius.....	944
Pezohaps solitaria.....	349	Protohippus mirabilis.....	943
Pholacrocortex perspicillatus.....	349	Protohippus pachyops.....	943
Phalangium dorsatum.....	999	Protohippus parvulus.....	943
Phalangium vittatum.....	999	Protohippus perditus.....	943
Phaoma gigas.....	79	Protohippus placidus.....	942
Phascolomys.....	1031	Protosphyraena striata.....	942
Phascolomys mitchelli.....	1031	Protozoa.....	64
Phascolomys platyrhinus.....	1031	Pseudobrookite.....	870
Phenomena and Development of Fecundation.....	103	Pseudogryphus californianus.....	349
Philadelphia Academy Natural Sci- ences.....	449	Pseudomorph of Serpentine.....	770
Phosphates and Marl of Alabama.....	1026	Pseudosuchia.....	392
Phylogeny of the Apteryx.....	867	Pteropelyx.....	758
Physiology.....	1051	Pycnogonid Eye.....	172
Picropharmacolite.....	613	Pycnogonid Studies.....	346
Pinakiolite.....	338	Pyrenaite.....	849
Pineal Body in Amblystoma.....	966	Pythonomorpha.....	945
Pinus nathorstii.....	1030	Q UARTZ.....	769
Pittcrite.....	613	Quartz and Feldspar Inclu- sions in Diabase.....	510
Pityophis sayi sayi.....	746	Quartz Crystals, 701, 851.....	951
Plant Physiology.....	211	Quartzite.....	515
Plattnerite.....	851	Quatrefages, Armand de.....	276
Plessite.....	169	Quedenfeldt, M.....	536
Pliocene Vertebrata.....	161	R ADIOLARIA.....	1031
Plumboferrite.....	247	Raia batis.....	173
Poisonous Nature of the Bite of the Heloderma.....	431	Ramsay, A. C.....	634
Pollination of the Yucca.....	874	Rana temporaria.....	966
Polyporus officinalis.....	170	Rational Nomenclature.....	319
Polyspermy in Vertebrates.....	967	Recent Books and Pamphlets, 37, 144, 223, 321, 397, 607, 502, 835, 932.....	1016
Popular Botany.....	344	Recent Deaths, 101, 276, 358, 453, 536, 634, 792.....	866
Porocephalus proboscidium.....	959	Recent Literature, 39, 147, 226, 324, 400, 690, 837, 935.....	1019
Porocephalus subcylindricum.....	959	Recent Works on Parasites.....	958
Porphyry of Monte Doja.....	512	Record of North American Zool- ogy, 311, 389, 722.....	794
Position of Solenoconcha.....	347	Rectorite.....	247
Pound, R., Review of Kuntze's Revisio Generum, II.....	147	Reduction in the Appropriation to the U. S. Geological Survey...	931
Predazzites.....	948	Reduction of Number and Classifi- cation of the Members of the National Academy of Sciences	320
Prehistoric Anthropology.....	681	Regeneration of Lost Parts.....	180
Prenolepis imparis.....	871	Reindeer in Alaska.....	435
Presentation of North American Indians Before the Congress...	187	Relations of the Chemung-Catskill Group to the Lower Carbonif- erous.....	157
Prize Dermatological Essay.....	453		
Prizes for the London Geological Society for 1891.....	158		
Problematic Organisms.....	5		
Problem of Marine Biology.....	799		
Proceedings of Scientific Societies, 83, 188, 274, 357, 448, 789, 879.....	1056		

Relationship of the Pleistocene to the Pre-pleistocene Formations of the Mississippi Basin South of the Limit of Glaciation.....	48	Scientific News, 101, 276, 358, 452, 535, 634, 717, 790, 879, 973.....	1060
Relative Intensity of the Conflict Between Organisms.....	923	Sclerostoma apistogramum.....	68
Reproduction in Sponges, Non-Sexual.....	626	Scolithus.....	240
Reptilia.....	407	Scolytus rugulosus.....	353
Respiration.....	817	Scovell, J. T., Elevation of Mount Orizaba.....	842
Retinite.....	773	Seaside Laboratory of Natural History.....	359
Reynosa Bed.....	1030	Separation and Study of the Heavy Accessories of Rocks.....	694
Rhodizite.....	56	Serial Section Cutting.....	80
Rhodonite.....	951	Serpentine from the East Central Alps.....	767
Rhynchocephalia.....	392	Sertoli's Cell.....	442
Rhyolite.....	56	Sexual Glands in Mammals and in the Fowl.....	525
Rhyolite Affected by Gases.....	166	Shell Heaps of the St. John's River, Florida.....	912
Rhytidia globosa.....	172	Shufeldt, R. W., Medical and Other Opinions Upon the Poisonous Nature of the Bite of the <i>Holoderma</i>	431
Riebeckite.....	55	Shufeldt, R. W., Ridgway's Anatomy of the Humming-Birds.....	869
Ridgway, R., Review of Shufeldt's Anatomy of the Humming-Birds and Swifts.....	1037	Siderite.....	951
Ritter, W. E., Note on an Abnormal Polygordius Larva.....	1047	Sideronatrite.....	613
Rocks of Cape Verde Islands, Composition of.....	165	Sigiterite.....	772
Rocks from Muir Glacier, Alaska.....	698	Silicates.....	340
Rocks of the Piedmont Plateau.....	511	Silicified Wood.....	51
Rocks of Southern Ohio.....	51	Silurian Fossils.....	160
Rocks of the Upper Eifel, Composition of.....	165	Silurian Trilobites.....	944
Rosenbusch's Reply to Levy's Criticism of his Classification of Massive Rocks.....	949	Siluroids, South American.....	173
Rowlandite.....	248	Siphonophora granaria.....	352
Ruffled Grouse in Ohio.....	71	Sirenian Jaw.....	1031
Rules of Nomenclature Adopted by the International Zoological Congress Held in Paris, France, 1889.....	383	Sirocco as Disintegrating Agent.....	242
Rumpfite.....	250	Slate-forming Material.....	52
Rutile After Brookite.....	55	Smith, J. B., Noctuidæ of Boreal America.....	874
Ryder, J. A., A Geometrical Representation of the Relative Intensity of the Conflict Between Organisms.....	923	Snakes in India.....	867
Rytina gigas.....	349	Snakes of Nebraska.....	742
S ACCHAROIDAL Rock.....	848	Société Zoologique de France.....	792
<i>Sega tartarica</i>	160	Soil Analyses	852
<i>Salmo salar</i>	345	Solenonchae.....	347
San Francisco Botanical Club.....	452	Solubility of Minerals.....	59
Sanidinite Bombs of Menet and Monac.....	697	Solubility of Minerals in Water.....	952
Sargasso Sea.....	251	Somites of Human Embryos.....	266
Sauvopterygia.....	408	Speech of Monkeys.....	1019
Sauromontidae from Kansas.....	844	Spermatogenesis.....	624
Saynite.....	941	Spermatophores of <i>Diemyctylus</i>	173
Scenopinodon.....	614	Sphalerite.....	951
	1031	Sphecius speciosus.....	532
		Spherulites	162
		Spiders	968
		Spider Enemy of <i>Oeneis semidea</i>	444
		Spiders from Florida.....	873
		Spina bifida and the Blastopore.....	782
		Spirifer di-junctus.....	1025
		Spizella socialis	705

Sponges.....	345	Texas Geological Survey, 1891.....	846
Sporocysts, Free-Swimming.....	520	Thelohan on Coccidia.....	958
Staked Plains of Texas, Age of.....	49	Thermometamorphism.....	847
Staten Island Natural Science Association, 98, 190.....	450	Thleodon padanicus.....	756
Stiles, C. W.....	101	Thyreoglossal Tract and the Hyoid	265
Stiles, C. W., Malaria Parasites.....	64	Thysanures, North American.....	521
Stiles, C. W., Notes on Parasites.....	959	Tick Island.....	568
Stiles, C. W., Review of Braun's Literature of Parasites.....	281	Title Fish.....	349
Stiles, C. W., Review of Linton's Entozoa.....	1037	Titanic Iron.....	790
Stiles, C. W., Review of Ward's Nectonema agile Verrill.....	1087	Tonalite Gneiss of the Adamello Region.....	951
Stiles, C. W., Review of the Worms of Brönn's Thier-Reichs.....	329	Topaz.....	948
Storeria dekayi.....	751	Topographical Changes.....	950
Strata at Rochester, New York.....	695	Tortrices.....	1
Striped Harvest Spider.....	999	Tourmaline, 702, 950.....	716
Strode, W. S., The Unionidae of Spoon River, Illinois.....	495	Toxoptera graminum.....	951
Strongylus convolutus.....	960	Trematode Parasites in the Cray-fish.....	352
Strongylus osteragi.....	960	Trematodes.....	69
Strongylus paradoxus.....	10	Tremolite and Garnet in English Flags.....	778
Sulphur Crystals.....	516	Trichosoma rubrum.....	245
Summer School of Science at St. John, New Brunswick.....	721	Trilobites.....	705
Swifts.....	1037	Trimerite.....	944
Symmetry of Crystals.....	699	Trochocopus pulcher Ayres.....	338
Systematic Position of Orthelosoma.....	345	Tropidonotus natix.....	64
Systematic Arrangement of the Families of Birds.....	1037	Trombidium sericeum.....	967
TABULATION of Igneous Rocks.....	422	Tscheff kinit.....	786
Taenia expansa.....	961	Tufaceous Slates from Wales.....	169
Taenia giardi.....	961	Tufa of the Campagna, Italy.....	947
Taeniidae.....	66	Tufts College.....	244
Tenite.....	169	Tylden, H. J.....	634
Tail in the Human Embryo.....	526		973
Talc from Madagascar.....	772		
Tapionoma polita.....	871		
Tatusia peba.....	72		
Taylor, W. E., Catalogue of the Snakes of Nebraska with Notes on Their Habits and Distribution.....	742	ULLMANITE.....	339
Teeth of Man.....	620	Umbilical Cord.....	614
Teleosts.....	112	Unionidae of Spoon River, Illinois.....	781
Temperature and Color in Lepidoptera.....	613	United States National Academy...	495
Temperature of the Dog.....	175	University Building in Lincoln, Neb.....	448
Testudinata.....	408	Umanite.....	753
Testudo microtympanum.....	51	Uranidea microstomus.....	168
Testudo twigida Cope.....	49	Uranite.....	963
Texas Geological Survey, 1889, Report of.....	47	Uranite Analyses.....	615
Texas Geological Survey, 1890.....	159	U. S. Geological Survey.....	515
			845
		VARIATION.....	999
		Vermiculite.....	339
		Vertebrata, 177, 350, 781....	870
		Vertebrates of the U. S. Geological Survey.....	834
		Vertebrate Fossils at Samos.....	243
		Vesperimus fraterculus.....	261
		Vesuvianite, 57, 340.....	950
		Vesuvian Lava, Crystals in.....	246
		Volcanic Rocks of South Mountain.....	1057
		Viverra augustidens.....	1031
		Viverra hastingsiae.....	1031

W ALDEYER'S Hydrochloric Acid and Palladium Chloride Method of Decalcification.....	632	Weed, C. M., Notes on Harvest Spiders.....	528
Walker Prize.....	635	Weed, C. M., Some Spiders from Florida.....	873
Wollastonite.....	951	Weed, C. M., Spread of the Horn Fly.....	872
Wandering Albatross.....	175	Weed, H. E., Entomolog at the Rochester Meeting.....	878
Wandering Cells in Echinoderms.....	865	Western State Universities in Small Towns.....	396
Ward, H. B.....	1061	When Will the Earth be Entirely Peopled?.....	187
Washington Biological Society, 194, 274, 357, 450, 886.....	1059	Wild Animals and Snakes in India.....	867
Washington National Geographic Society.....	885	Wilder, H. H.....	1061
Wasps and Humming-Birds.....	787	Williams, G. H., Volcanic Rocks of South Mountain.....	1057
Watase, S., On the Significance of Spermatogenesis.....	624	Wilson, E. B., The Artificial Production of Twins and Multiple Embryos in <i>Amphioxus</i>	1059
Watase, S., Origin of the Sertol's Cell.....	442	X ANTHIDIA in London Clays	333
Water-Bearing Horizons of Southern New Jersey.....	157	Xenotime	54
Watson, Sereno.....	358	Y ATES, L. G., Causes Which Influence Topographical Changes.....	1
Wavellite	952	Yucca Pollination.....	774
Webber, H. J., Phenomena and Development of Fecundation	287	Z INCITE.....	952
Webber, H. J., Yucca Pollination..	774	Zircon.....	772
Wernerite Rocks.....	513	Zigno, A. de.....	634
Weed, C. M., The Striped Harvest Spider, a Study in Variation,..	999	Zoology of the Snake Plains of Idaho.....	218
Weed, C. M., Ash-Gray Harvest Spider.....	32	Zoological News, 176, 264.....	350
Weed, C. M., Color Preferences of the Carpet Beetle.....	712	Zoological Treatise.....	276
Weed, C. M., Harvest Spider Notes.....	786	Zoological Text-Books.....	324
Weed, C. M., Notes on the Clover Mite.....	715	Zoology, 64, 171, 257, 345, 431, 618, 519, 705, 778, 861.....	1037